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[For the American Bee Journal.]

Novice.

MR. EDITOR:—We feel it no more than our duty to say a few words in favor of "Novice," as he has been so often accused through the columns of your JOURNAL of "putting funds into his own pocket," and "trying to get his hands into others' pockets to get out a dollar," etc. The first start we made towards keeping bees was to purchase *Quinby's Mysteries of Bee Keeping Explained*, and send \$2.00 for the AMERICAN BEE JOURNAL, one year, through the pages of which we read many interesting articles from its contributors. Being of an inquiring disposition, I wrote to many of the contributors, asking questions, and generally enclosed from 10 cents to \$1.00 according to questions asked, as a recompense for trouble, etc. Among the number written to were some of those who are calling "Novice" greedy after money, but all of them kept the money sent them, till one day I thought I would write asking "Novice" more questions than I had any other one. I intended to have enclosed \$1.00, but found I had nothing except 25 cents, so I enclosed it and let it go. I soon received a satisfactory answer to my questions and the 25 cents; "Novice" stating that he did not know what I wanted for the 25 cents, so he sent it back! Brother bee-keepers, I feel a little like being ashamed of you, not because you kept the money sent you, but because when "Novice" is trying to help others along by first giving a description of the conveniences he uses, and then, if they cannot make them or hire them made, to sell them to those desiring at a reasonable compensation, you have so much fault to find with him.

G. M. DOOLITTLE.

Borodino, N. Y., June 20, '73.

P. S.—Bees doing finely now; locust, white and red clover in full bloom. Bees work about alike on each.

G. M. D.

[Translated from the Bienenzeitung.

Renewing and Impregnating Queens.

As the prosperity of the hive depends upon the fertility of the queen, one of the weightiest matters coming under the attention of the bee-keeper, is to have none but productive and perfectly healthy queens in the stocks he desires to preserve through the winter.

Too old or otherwise defective queens must be removed, young and healthy ones being substituted in their place, or, stock wholly destroyed. Owners of a large number of stocks would do well to mark on the hive the age of the queen. One year and two year old queens can winter profitable, if they still show themselves to be productive, but three and especially four years old, are too aged. In all probability they will fail the following spring, at the very time, when their brood would be most needed and the stock will bring little or no profit.

If one is in the position to substitute for the old queen, after the lapse of a few days, a young and fertile queen, the operation need not be limited to any particular season of the year, and he will do well to remove a queen unfit for the performance of her duties, if he is in position to substitute a better in her stead. Last summer I divided a stock in a log hive, taking therefrom a large swarm. I had two objects in view; 1st, to obtain a new swarm; 2nd, and more especially, to substitute for the old queen, an extremely beautiful and fertile Italian queen. Notwithstanding I had driven nearly all the bees out I could not get the queen. After a time I opened at hazard this same stock, and found the queen on the first comb. Naturally, I at once removed her, and after the lapse of a few days gave them another and thus accomplished my first object.

Especially on warm days queens leave for a time the brood comb where the greatest heat is, and seek the cool portion of the hive near the door. Opening the hive* and without loss of time or great disturbance removing the combs

*The Dizlerzon hive is here alluded to.

near the entrance the queen will be soon found and much waste time spared, which at other times would be required to find her.

If the rearing of a queen has to be left to the hive itself, then certainly the old queen can not be removed at will. Should the removal be too early, then the rearing of an entire generation of bees will be hindered, which could be of great use during the year, and after the lapse of fourteen days an unwelcome afterswarm and consequent weakening of the swarm may follow. Should the removal of the old queen be postponed too long the trouble to be feared is a want of drones, or more especially the want of a warm fine day favorable for the bridal flight of the queen. This last condition will be worse than the first, because an old queen still productive, is better than a young unimpregnated queen, which will lay nothing but drone eggs, and drones will never bring a stock to a high state of profitableness.

With this regard one can count on the fertilization of a queen, though born late in the season, if it be strong and its wings free from any defects, and the autumn affords a few fine days. If there are in the neighborhood a number of stocks some drones will be met with, although the bees may have destroyed the great majority long before, so that the queen repeatedly flying out and searching will chance to meet one.

Besides, let the pleasant and warm days of a temperature of about 20 R., so favorable to the fertilizing flight, pass unused during the summer months, and they will become rarer and rarer as autumn advances. During the entire month of September, when our association met at Graz, there was not a single favorable day on which the queen could have made a successful flight, although I had plenty of drones in my apiary, yet on the 8th of October, a lovely fall day, all were fertilized. An examination that evening revealed the fact that each young queen, heretofore unmated, bore the undoubted signs of impregnation. After such observation, one need have no fears; especially when he sees that the body of the queen has swollen and that she begins to lay eggs, which unimpregnated queens rarely or never do during the first fall of their existence. But one must not judge the queen unimpregnated because he finds no eggs in the cell, and the body of the queen remains lank. Many stocks, with late reared queens often hatch brood (using their store of pollen) until late in November and December, alas, often to their own undoing, yet not always. Others place themselves in their natural fall nest, desiring no brood, prepare no food for the brood, nor feed the queen with any, so that her body is not appreciably altered, and none but an experienced eye can tell whether she is impregnated or not. Under such circumstances how shall the truth be discovered, so that an unimpregnated worthless queen shall not be kept over the winter? Her ability to fly is one very good

ground from which to judge. A laying queen is somewhat disabled from flying. While examining a hive last autumn, the comb upon which the fertile and laying young queen was, accidentally fell from my hands. The scattered bees returned to the hive, and cursory glancing at the returning bees I was unable to distinguish one from another. About an hour afterward, noticing a restlessness in the bees, upon examination I discovered that the queen was on the ground in front of the hive making vain attempts to reach the entrance. An unfertilized queen on the other hand flies easily and nimbly as a working bee; a queen impregnated but a few days, although not yet laying, flies with difficulty and reaches the entrance of the hive only after some exertion, should she be allowed to fly before the hive. After the middle of October when there is no further chance of fertilization, the wing of a queen of doubtful fertility may be clipped. The next step will be to feed the bees at certain hours with somewhat fluid honey, when the queen, if unfertile, will fall to the ground and the stock show signs of queenliness. The situation will then be known and either a new queen be supplied or the stock destroyed.

The removal of aged queens is, alas, too often delayed, because in stocks populous and filled with honey it is a very difficult operation, and further, by the hope that the bees will themselves renew their queen. The Italian bees, whether full-blood or hybrid are very apt to bring about such renewals. I have repeatedly observed that even when the stock has a somewhat vigorous queen the bees will make preparations for a successor. With bees having but a trace of Italian blood, we may note the removal of their queen, without examining the interior of the hive, by noticing the appearance of a young generation of bees—lighter or darker in color than the old bees. With young bees of the unmixed race this distinction cannot be made and hence one can not decide whether the new or old queen still reigns. But this distinction can be adopted with certainty, when the young queen of the black swarm is impregnated by a pure Italian drone, as among the young bees some will appear with yellow bands.

DIZIERZON.

Caulsmarkt.

[For the American Bee Journal.]

Jottings from the Apiary.

Believing that each one of us, as we monthly derive both instruction and profit from the reading of the JOURNAL, as we peruse the thoughts of such a corps of contributors as Langstroth, Quinby, 'Novice,' Gallup, Grinum, and I might continue almost *ad infinitum*, are receiving much valuable information for which we should render some small return, at

least, of our own observations, I have thought it proper to tender a few "notes by the way."

How much interest was felt in relation to the cause which occasioned the disastrous losses of our bees in the winter of 1871-2, and yet but few, if any of us, were prepared for the fact that, the winter which has just closed, (that of '72 and '73,) would far surpass the previous one in point of fatality, even, in many instances, devastating entire apiaries; and I greatly regret to state that, in a radius of fifty miles from the point at which I write, that from one-half to two-thirds of our colonies have perished. I feared last fall that, in the absence of proper management, this loss would occur, and so I predicted.

I assume that however much honey a colony may be possessed of, even if such be stored in their permanent abode, the queen will not continue to increase her brood, *unless food can be procured from abroad*. And by the proper management, before referred to, I mean judicious feeding when the bee fails in finding her treasure in nature's storehouse. At least, this is the result of careful observation for many years past. Last fall there was a decided failure in our honey crop, and (except that feeding was resorted to,) the queen ceased to deposit eggs, and, as a consequence, the stock passed into a very severe winter with comparatively nothing but old bees; these gradually died off, none younger were left to fill their places, and although they were possessed of ample stores of both honey and pollen, they perished from cold. I have carefully examined many that have died, and found abundant food, and that, too, in such position in the hive as was easy of access to the bees. One stock in particular I looked at in the cold of early March, (this, too, was possessed of a young queen,) and found at least twenty pounds of honey, no brood or eggs, and less than a pint of bees; the bees, when shaken from the comb, would rattle like small stones, apparently frozen stiff. In every case the combs were entirely clean and free from smell; and in only one instance was there a little mould. And just here I would say to Mr. Johnston, who writes in the May number, that we had not the appearance of honey dew in our locality last fall, and I entirely agree with him when he asserts the fact that should such have been the case, I could not have found a clean hive and combs, because, having had some of his sad experience, I look upon honey dew as one of the most fruitful sources of dysentery.

I know that he who attempts to account for such serious losses as have taken place during the past winter, should have reasons to present for the "faith which is within him," else he will surely be controverted, or, at least, disbelieved, by those who hold a different theory. And this is but just and right, thereby do we gain all our practical knowledge, and "surely

in a multitude of counselors" there should, at least, be "a little wisdom." Let it be our aim to state our opinions carefully, and not too positively, having earnest respect for those of others; and most gladly would I accept any cause of argument which would disprove the conclusions I have so clumsily stated, and which I have only arrived at by being forced so to do.

How many different opinions were advanced as to the disasters of '71-2; and it might not be presumed too bold an assertion to state that even yet it appears an open question. I may be pardoned, then, if I here say that I approached the subject presented with no small degree of temerity, but feel that I have attempted to discharge a duty when I have stated the prominent facts which have passed under my observation, and, by my action in the premises, shall probably draw the opinions of those who are much more capable than myself, which is the ostensible object of this article, and this much granted I shall congratulate myself that I have not written in vain.

Fearing the results before stated, I last fall fed four of my stocks, not my best by any means, (most of the strongest were lost,) and the result was clearly apparent; during the months of October and November they had plenty of brood, and although three of them had queens *three years old*, the brood was even disproportionate to the amount of honey in the hive, and to-day they are the strongest stand in my apiary; one of them a hybrid, having drones flying on the 15th day of April, and yet we had quite cool weather. Would it be too much to assume, then, in conclusion of this already too long communication, that, had we last fall taken the advice of friend "Novice," and fed our favorites with well prepared syrup, it might not have been our painful duty to now assign our reasons for the disaster which has so lately fallen upon us, the return of which I hope will never have to be recorded by any true lover of the "B."

Beaver, Pa., May 8, 1873.

[For the American Bee Journal.]

Gallup vs. "Novice" or Dysentery.

In volume VII, No. 12, p. 274, "Novice" asks, "Will our Western friends please tell us if bees ever have the dysentery after flying in the Spring?" Also, on the same page, he says, "Others, besides Gallup, have given the theory that, when young bees were raised largely in the fall there would be no dysentery. But, alas for theories!" Now, Mr. "Novice" we gave facts as far as we went. There was no theory about it. But we never pretend to give the whole history of bee-keeping in one short article. Now, our queens, that bred late in the fall, did not commence to breed in the spring until they were set out of the cellar, while old

queens, that stopped breeding the first of September, commenced breeding quite rapidly in February, during the warm spell; and March turned cold, and continued cold during the entire month, and with us, in a damp cellar, it is the young bees that get the dysentery, and not the old ones. Furthermore, old bees are incapable of digesting pollen, and so are drones. So your drone-laying queen was no illustration whatever. We set our bees out some time in April, and they began to breed very rapidly. Sometime in May, (we did not keep the dates,) our bees were confined to the hive 21 days by cold, damp weather, and stocks that had bred most rapidly, and especially our stocks that had wintered on the summer stands, had large quantities of young bees of the right age to require a purifying flight, and they had the dysentery very bad, so much so that I was fearful of losing some of the stocks. Standing in front of the hives, it could plainly be seen that bee after bee would pass out and fly away, never to return. Some stocks dwindled down one-half. Our bees were Italians. Many stocks of of black bees in my vicinity, that were strong in numbers when set out in the spring, dwindled down entirely, and disappeared, leaving, in many cases, both brood and honey.

On the first day of their flight after their confinement, it was a sight to see their discharges. One person said his bees appeared to have strings from an inch to an inch and a half long attached to their abdomens; mine certainly presented such an appearance. Our bees that had the dysentery in the cellar, were those that had raised brood largely in the cellar, and in every case they had ceased breeding a month earlier than common. All those that we kept breeding until the usual time in the fall by stimulation, did not commence breeding in the cellar, and did not have the dysentery in the cellar.

Now, "Novice," don't say so much about theory, for we are stating facts; and there is more to this question that we have not yet considered, but will endeavor to do so in another article. Therefore, do not commit yourself just yet on the subject.

One person lost 20 out of 30 black stocks in May, and those stocks were in good condition to all appearance when set out in April. Another person bought 5 stocks, and selected them from a lot; removed them home, and lost them all in May. But, as there was no room on the ground, and they left the hive in all cases to die, consequently there were no dead bees seen about the hives. In two cases, under similar circumstances, in our long experience, we have had bees take the dysentery in the spring after their first flight that we distinctly recollect.

E. GALLUP.

Orchard, Mitchell Co., Iowa, Dec. 23, '73.

[For the American Bee Journal.]

Items.

After a late start in the spring bees have done well. In a season like this there seems to be such an abundance of honey that five hundred stocks could be kept to one that is. After fruit blooms are gone the poplar blossom opens; generally about the 15th of May. This lasts about three weeks, and is so rich in honey that the bees will scarcely notice white clover while it lasts. I have seen, on a warm, dewey morning, large drops of honey in the tulip-shaped poplar blossom, so that a bee could load itself two or three times from one flower.

There were only some twelve or fourteen colonies left in this township at the close of winter. My own stock was reduced from twenty-three to six; have increased to twenty full, strong colonies, up to this date, June 26.

I suppose that most all progressive bee keepers who use frame hives, can now get along with spring and summer arrangement, in fact thoroughly understand the business, at least well enough to get just what they want—honey, increase of colonies, or queens.

But to successfully winter—Ah! there is where the rub comes in.

Can we not have through the JOURNAL some more definite instruction for out-door wintering from men who have had good success the past two winters, and let us have it in time; do not wait till winter is upon us.

Yours respectfully,

INDIANA.

Artificial Food for Bees.

A good preparation for feeding bees in the Spring is said to be as follows: Take at the rate of five pounds of refined or white sugar, two gallons of soft water, one tablespoonful of salt, ten grains of cream tartar; put all together, bring to a boil, skim, and when cold, add eight ounces pulverized, slippery elm bark, or fine oat-meal, stir it well, then feed in the hive.

• An enthusiastic apiarian is said to have been stung 1,100 times by bees, but he still has a prejudice in favor of the innocents.

[Translated Kleine's Bee Journal.]

Spring-Feeding.

Spring-feeding is divided into two kinds; that of necessity, and that of speculation. Under the first head the bees are given just so much food as will keep them alive; under the second, the bees will receive more, in order to stimulate the rearing of young bees and thus obtain many and early swarms. Those bee-keepers who lack a good spring pasturage and are desirous of using their bees to the greatest advantage, have to unite these two kinds of feeding, which is then called spring-feeding.

Those ignorant of the state of our pasturage, both in the *Eichstadt Bee Journal* and in many books of instruction, have strongly denounced as injurious the much-feeding and forced increase of population practiced by certain bee-keepers, and called it irrational. Even the great Dzierzon himself, who depends on late pasturage, declares (*Eichstadt Bee Journal*, 1866, p. 59), "I hold this perpetual bee-feeding, as done by the bee-keepers on the heath, to be a dangerous abuse. This feeding is an evil which should be resorted to only in desperate cases. Baron von Berlepsch has committed himself in like manner." I cannot, in all things, agree with the teachings of the above named authors; nevertheless, I am of opinion that many of the heath bee-keepers often feed at unseasonable times, and too strongly for stimulating purposes, so that they often accomplish the contrary of what they seek. At least, with good intentions, they squander much honey. It may, therefore, be of interest and use to become acquainted with spring-feed as practiced by the heath bee-keepers.

To all unprejudiced bee-keepers, who possess abundant spring-pasturage, it must be evident that, generally, for those locations having a poor spring-pasturage, and especially for such places where the chief honey yield begins early in July, spring-feeding, as a rule, is unavoidable. Because,

1st. In but few very prosperous years will it be possible to have the desired number of standard stocks, which will likely reach with their honey supplies until the opening of the honey season; while too many will reach the end of their supplies before that time.

2d. Such stocks as have too thick honey-combs will make poor standard stocks, because in the spring the bees will have much trouble to reduce these deep cells to the length proper for brooding purposes. Such a swarm increases in numbers slowly.

3d. Moreover, the preservation of the living bees is not alone to be regarded, but much more, during the poor honey months of May and June, should the rearing of brood and multiplying of the population of the hive be stimulated through "speculative" feeding, so that by the opening of buckwheat blossoms the number

of the nursing bees shall have increased $2\frac{1}{2}$ per cent. and that there be an abundance of laborers for the harvest.

When it becomes evident that in certain localities bee-keeping will not pay without spring-feeding, and that it is a necessary evil and appurtenance of paying bee-keeping, it becomes important to discover what is the food best adapted for our purposes. In many places candy or grape-sugar is given to the bees instead of honey. These substitutes are warmly prized by many, and as warmly denounced by others. I have made no experiments to test their value. We heath bee-keepers hold honey to be the best bee food. As in some scant years the supply will not reach, it is necessary to take advantage of favorable years and lay up a supply of food honey. The most of the heath bee-keepers, who have their apiary well in hand, retain for some years a good supply. An old rule among bee-keepers is, that food-honey must remain in store three years. To show the weight placed on this rule in old times, I would state that about fifty years ago, at the marriage of a wealthy person, it was stipulated in the marriage settlement that in selling honey from the apiary, a quantity sufficient for feeding purposes for three years should always be reserved. To this customary foresight it is that bee-keeping has for many hundred years rooted itself so deeply and firmly in Lunenburg, and that a succession of bad years did not ruin bee-keeping.

While the heath bee-keepers are unanimous in favoring the use of honey as a food-material, yet in the heath districts of Hanover there is a division as to whether, for spring-food, honey should be strained or not. Those apiarians who use unstrained honey (such as has been stamped into barrels, combs and all), declare that this kind is better for bees, because,

1st. This honey is in its natural state.

2d. That the bees, owing to the portions of wax floating in the honey, are not liable to drowning.

3d. That owing to the portions of the wax in the honey the bees are not in a situation so quickly to store away the food, and hence the hive will be kept during the night in a greater degree of activity, and consequently in a greater degree of warmth.

4th. Because intermingled with the honey and in the wax will be found quantities of pollen, which is needed for the young brood as food.

In opposition, those who use strained honey do not affirm that strained honey is better to feed than the mashed, but they are of opinion that it accomplishes the same purpose, and reply to

No. 2. That the drowning of the bees, while feeding, can be prevented; to

No. 3. There is no weight to be given, since the bees do not always feed all night long. The increased warmth, because they are not fed daily, brings no appreciable advantage.

No. 4 is based on many good grounds, since pollen plays a most important part in the house-keeping of bees. Yet, if judiciously-timed feeding is undertaken, nature itself will at this time supply the needed pollen, and favorable weather also comes for gathering it. And even where the spring is so backward as to prevent the bees from gathering the needed pollen, the little they will find in the mashed honey will not suffice them; hive-meal must be substituted for pollen. Admitting all the advantages heretofore stated in favor of crushed honey-combs, there will still be this disadvantage: the great loss of precious wax, especially if, on the following morning, the bee-keeper does not betimes remove the feeding-apparatus, with the refuse wax, and cleanse the floor of the hive. Should he forget this he will be opening the way for robbers. Besides, it takes a great deal of time, every morning after feeding, carefully to remove all portions of wax from the bottom-boards, especially if many bees remain sitting on the fragments of the combs.

Feeding crushed honey combs, especially in Lunenburg, is in my opinion bad, with the exception of the southeastern portion, where I live. Also in the adjacent Altmarkt and Braunschweig, where the old Lunenburger method is used, is the feeding of strained honey dangerous. Under such circumstances it is my opinion that when your bees require early spring-feeding, before they can obtain pollen from the trees, then it is most advantageous to feed them unstrained honey, on account of its pollen. I then give the unbroken combs the preference over the broken ones. Should these combs be pressed into the feeding-trough the bees will have to descend to them, and, should the weather be somewhat cool, they will find it difficult to return. Such premature feeding with skilled bee-keepers can only happen after an extraordinary bad year. In such years the owners of basket-hives must carefully save pieces of comb, filled with honey, to be used in early feeding. It is also of the greatest necessity in such poor years that the mother stock should, early in the fall, be supplied with the wanting honey.

In ordinary years such mother stocks should be chosen as will reach until May with their supplies. If, perchance, the supplies of some should give out by April, strained honey will not injure them, as they will then be able to gather pollen. I agree in the opinion of those who think that strained is just as good for bee food as the crushed honey-comb. The straining must be by the cold process, or as little heat as possible applied. In this locality, in my opinion, there is no necessity of feeding the unstrained honey, on account of the pollen contained in it. Our spring flowers are poor in honey, but rich in pollen. In favorable weather for fly in spring, I have observed in my hives with movable combs, that the bees gathered too

much pollen, thereby narrowing the brood-space. On both sides of the brood-comb I have found two combs filled with pollen, so that the queen was unable to lay any eggs in these combs. When such quantities of pollen are stored in a hive, I deem it fortunate should breed-weather occur, thus causing the bees to use their stored-up pollen and remove the check on their increase of brood. The result of my observations has been, that should we have good fly-weather during April and May, the brood does not increase so rapidly as when we have changeable (not stormy and rough) weather. From the above-mentioned facts this is very evident.

I think I have now shown that, with our quality of pasturage, strained honey is just as good for food as unstrained. We, who use strained honey, have this advantage; that we lose no wax, and save the time required in gathering the wax and cleaning the bottom-board. The opinions of bee-keepers are also divided as to whether the honey should be diluted in water or not. The great majority of bee-keepers feed at the commencement with undiluted honey, and afterwards following an old bee rule, when the oak trees thrust out their leaves, feeding diluted honey. Many always feed undiluted honey, and believe it to be the best. I formerly tried it, but abandoned it; and for these reasons:

1st. Because it does not flow so readily or regularly as diluted honey, which is not so heavy—an object to be considered in a large apiary.

2d. I require proportionally more honey than when using it diluted, and the development of brood among my bees is somewhat hindered.

3d. Weak stock are unable in cold weather to take up their food as rapidly as they should, so that in the morning their food-troughs shall be quite clean. With candied honey, especially when much crystalized, the bees are unable to deal, unless the honey crystals have been moistened with water.

If one reflects over the household economy of the bee, he will readily come to the conclusion that in feeding for stimulating purposes, honey diluted with water is better than honey undiluted. Because, through such feeding, will there be a larger development of brood. For the preparation of the food the bees must be supplied with much water. Had we constantly in spring, such weather that the bees could fly without danger and obtain what water they needed, there would be no objection to feeding undiluted honey. But every observer well knows, that even as late as May, the weather is some days so unfavorable that the bees cannot bring in any water. In pleasant weather thousands are engaged gathering water, and, in unfavorable weather, they are thrown into the water and drowned. Is it not, therefore, better to dilute the honey given them, so that the bees may more readily carry up their food and prepare nourishment for their brood?

Through water the honey will again resume its natural, watery, nectar-like appearance. Upon these grounds, in case I am forced to feed in order that I may keep my bees alive, I give them water. Later, when feeding for the purpose of stimulating is begun, I mix one part of water with two of honey. Should I feed very old honey I use equal parts of both. In feeding young swarms, for which no very old honey can be used (since it would reduce their building instinct, but would increase their swarming desire), I use honey one year old, mixing them half-and-half. For thinning the honey, most bee-keepers prefer flowing water to well-water. Many boil the water first, thinking it advantageous. Having my bees at some distance from the house, I have taken the water I used for diluting the honey from a small stream, and have never tried boiled water. According to late scientific discoveries, water is filled with vegetable and animal organisms and germs. In boiling water these are all destroyed and the water will not prove injurious to the bee-food. In this respect, boiling the water is judicious. But when one reflects on the other hand, that the bees gathering the water for feeding their brood from standing pools (which would first come under the head of impurity), and that such water does not injure the brood, we are led to believe there is no necessity for boiling the water. In preparing his bee-food, the bee keeper must have care that he does not dilute more honey than he will need that night. Should any honey remain unused, longer than a day, if the weather be somewhat warm it will become sour. H. SCHULZE.

Kneesebeck, March 9, 1873.

[For the American Bee Journal.]

Doolittle's Article.

DEAR JOURNAL.—We really did not know what title to give to our rambling thoughts, so we concluded to head them as above. We have passed through one of the most disastrous winters to bees within our knowledge, in Onondago Co. Fully three-fourths of all the bees in the county, which went into winter quarters last fall, are dead. Of those who belonged to the class who have their bees, and then let them take care of themselves, scarcely one remains.

Our bees were wintered on their summer stand, according to a plan given in a previous number of the JOURNAL, and came out with the loss of but one swarm, which starved through carelessness. Four were found queenless, which with two very small ones, we united with others, making our present number thirty five.

Our bees flew finely February 4th, and March 7th, which would not have been the case had they been in the cellar. They had their cleansing flight April 1, and it remained fine weather for them (which they improved, carrying in flour, water, etc.,) until the 17th, when it came

off cold and has remained so without a day warm enough for them to fly ever since, the result of which is although the queen has laid some eggs within that time, yet the bees have not hatched any of them, and there is not thirty square inches of larva in all our hives, and has not been in the past ten days. This is not guess work, for we have examined, so we know.

The 16th of April our hives averaged one hundred and fifty square inches of brood in all stages, and at the present time scarcely anything but eggs remain, as nearly all the sealed brood hatched. This will be a serious draw back, even if the weather proves favorable hereafter. I have tried feeding some swarms half a pound every day, and they are no better than the rest. Now Doolittle wants his say about this feeding to promote breeding in the spring, or any other season of the year, as we have tried every plan we have ever read about, and that is quite a number, we will assure you. Have all the honey in the hive in the fall that your bees can possibly consume by the next season, when the flow-ers commence to yield honey, which is not less than thirty-five pounds, then when the bees begin to fly the next spring, divide the cluster in the centre, (if they have all the brood they can protect,) and insert a frame of honey after first breaking the sealing of the cells, by passing a knife flat ways over them, and so keep doing as fast as they can protect the brood, and you will find that you will get your honey all used up and more brood than you can possibly get by feeding with any feeder. If you have not the honey in the hive, then you must feed of course, and even then we should prefer turning it in the combs. The worst way of feeding that we have ever tried was that recommended to the "Deacon," by Herbert A. Burch, in *Bee-Keeper's Journal*, where he says, "feed every stock by 10 a. m.," etc., we thought when we read it, here was where we had missed it as we had always fed in the evening, so we tried that, and they did "rush for the fields," and into every hive that could be got into, and such a time as we had we never want again, so we have gone back to feeding in the evening to prevent robbing if we are obliged to feed. Friend Burch will please excuse us, as perhaps our bees are like Quinby's, "very contrary." We want our hives tight at the top to keep in the warmth, and this we can secure to perfection with "Novice's" quilts. Another thing we do which we have not seen in print, and that is, we keep the entrance closed entirely nights, and during the day when the mercury does not rise above forty-four degrees, and by that means, keep in all the heat the bees can generate. If any one is afraid of smothering, try one or two hives, and they will be convinced that it cannot be done in cool spring weather.

We think we shall all have to come to the conclusion of D. L. Adair yet, that bees properly cared for, can live without air. We keep the

entrance shaded from the sun at all times when the bees can not fly.

G. M. DOOLITTLE.

Borodino, N. Y., April 28, 1873.

[For the American Bee Journal.]

From Fulton County, Illinois.

Friends Novice, Langstroth, Quinby, Gallup, Grimm, Hosmer, Furman, Davis, Tupper, Dandant, Bickford, Alley and others, which I cannot think of now, I am much obliged for the information derived from your writings. There appears to be some wrangling about who wrote first about some different ideas. Please have patience, one with the other, so they are only learned by the new subscribers. The same ideas should be printed over again for the benefit of new subscribers. What good ideas are in the back numbers of the JOURNAL, before I subscribed, will do me no good, for I have not got them. Send in your new lessons which you have learned this winter, I want to hear some founded on facts. I am still learning. Here is my lesson; it is new to me, perhaps old to some of the rest of you: It won't do to place your stands too near a stone wall in your cellar. I lost two good stands this winter by so doing, not dreaming that they would draw too much moisture; but they did, and were as wet as drowned cats, as the old saying goes. The others, placed promiscuously around in the cellar, with the hive shoved back to exclude mice, and an old piece of carpeting, etc., placed on for honey-board ventilation and to keep the bees from coming out, went through dry and nice.

Novice, what do you mean when you say in your circular sent me some time ago, in describing the Simplicity Bee Hive? "Now saw off (on a bevel) two and a half inches from the top of the cover, and then hinge it in the same place and you have a perfect fit?" Do you mean to hinge it like the lid of a chest, or how? Your tops and bottoms are loose, and can be used at either place, if I understand you right. I think I would prefer the top loose, so I can shake the bees off in front of the hive when I open them and some stick to the top. I agree with you, Novice, that all good honey will candy if extracted in cold weather, at least mine has. Now, why do our Chicago honey merchants say they do want any candied honey to sell, when all good honey candies? I fear they want an excuse to make deductions, and therefore larger profits. How does it look to others?

I left one Standard Gallup Hive out all winter, protected by a high, tight board fence and smoke-house, with an old coat for a honey-board, and they went through all right, with the mercury at 28° below zero January 9th, 29° below zero January 28th, and 12° below zero one day in March. This has been the

coldest winter ever experienced in this State, I am told. I was going to protect my thirty-seven stands in the same way I did that one, but could not get time; and, when we had the first cold spell of 28° below zero, I told my son that this would not do for unprotected stands; so we carried twelve Langstroth's in, which I intended to leave out, but two of them were gone, making four lost. One light swarm hived on the 19th of November went all right in my dry cellar, but when I put them out this spring and the mercury fell to 12° below zero they stopped breathing, making my total loss five in thirty-seven. If this had not happened you would have heard me "blow" about wintering bees, but I will hold my pen back now. Several men asked me whether an out-house would not be a good place to put bees into in winter. I told them it was not, except they make it with double walls, so the bees cannot freeze; but would rather leave them on their summer stands, where the sun can warm them up now and then on warm days which we get; they can then move their positions to their stores and hive. Whereas, in an out-house, with no protection, it is as cold as outside, and the combs continue to be frosty until it is too late. This is my idea. Am I right, brother Langstroth? perhaps it is old to you.

Do you think, Brother Novice, you can keep your head above water? I see some are going "heavy" for you, but I feel glad you can take it so patiently and press forward in our cause. That is the kind of spirit we all should let rule; when our pen wants to write some hard personal step him on the spot, and consult with him how it looks in print—and, if he would go ahead, cut off those words that would wound the deepest.

If this article is too long for one number make two of it; correct in proof or throw it aside, as you think proper. Long may you live to do good to the bee-keepers of this and other countries, and never get stung by a drone is the wish of the dusty (miller.)

DANIEL H. KELLER.

Duncan Mills, Fulton Co., Ill.

[For the American Bee Journal.]

Surplus Queens.

These should be reared in August and September, and kept in reserve for early use the ensuing spring. The advantages are so great that the operator is amply rewarded for his labor and expense. The intrinsic value of a colony of bees depends mostly on a good, healthy, fertile queen. Her presence and ability sustain and stimulate her subjects to action; without her the colony must go to ruin. Thus we may see how important a queen is to the prosperity of the colony. My experience teaches me, that in this cold northern climate, where our bees swarm so late in the season that our

young swarms do not come out early enough to be able to lay up a sufficient store of honey, the season being one half past before the young colonies are prepared to enter the field, it is wisdom to ask if we cannot do something to assist and strengthen our colonies in season, that they may be in readiness to enter the harvest field on the opening of the first blossoms, thus rendering the honey season much longer, giving the bees time to lay up a sufficient amount of stores.

Now, the question arises, how can we manage our apiary so as to be able to furnish bees enough to enter the fields in due time? My opinion is that we should be well rewarded for the extra trouble of rearing one or two surplus queens for each colony, to be kept in reserve until spring. A hive containing twelve frames and two division-boards, so arranged that the animal heat may be retained and equalized, giving each apartment four frames, an entrance at each end, and one in front; then put in each apartment about an equal amount of bees, young brood and larvae, that they may rear a queen in season to be fertilized. We will now have three queens instead of one, and the same amount of honey and bees, and probably more. Let them remain in the same hive through the fall and winter, until they are to be put on their summer stands; then take each four frames and put into a new hive of the same dimensions, with a movable division-board, to enlarge the space with the growth and increase of the colony. Caution should be used to prevent the space being too large for the animal heat, which must in all cases be preserved.

Now we have three queens to increase the workers instead of one. We also have three swarms with workers sufficient to gather a good supply of honey, also in the fall a large, strong colony of bees. A good, prolific queen with bees enough for breeding purposes, are all that is required in the spring, as most of the bees hatched in the fall, die during the first months of their flight in spring. Three queens may be wintered with the usual amount of bees, in a strong colony, with as little cost and trouble as one. If one queen is of any account in the spring, three are worth three times as much, providing there are bees enough for breeding purposes. Then you can see the advantage of rearing queens in August, for breeding the following spring. It is judicious management to leave bees to swarm naturally. In order to make it profitable, the apiarian must assist the colonies by feeding and stimulating to breed, that each colony may be strong and fully prepared to enter the field in the opening of spring. A strong colony in spring seldom fails to gather a full supply of honey. They have the whole season, while those that swarm out the last of July and August, have only about three months. Hence, the great advantage of rearing surplus queens for spring use.

Bees that are hatched in the spring do not live longer than the honey harvest, and those hatched in summer die before breeding time in the following spring; consequently, bees should be hatched as late in the fall as possible, that they may live until spring, to sustain the colony until young bees are bred to supply their places, leaving the colony in good condition for the coming season. No one need expect any profit from keeping bees unless they are properly cared for. It is like all other business, when neglected it soon goes to ruin.

E. GERRY.

Garden City, Minn.

[For the American Bee Journal.]

Foul Brood Cured.

I wish to notice an article on foul brood by M. Quinby, in the May number of the AMERICAN BEE JOURNAL, in order to commend it to the attention of bee-keepers. Having had to contend four years with this loathsome disease in my apiary, I am happy in being able to say that I am now clear of it. And, as it is the only instance of foul brood having appeared in this State, as far as I can learn, I am gratified at my success in extirpating the disease without its extending to any of my neighbors. The method which I have pursued is almost identical with that recommended by Mr. Quinby in his book on bee-keeping and in the article referred to above. And I now feel satisfied that no great advance in knowledge as to the cause and treatment of foul brood has been made since Mr. Quinby published his book, though I was led to hope that some valuable discovery had been made by Mr. Lambrecht, a German, from remarks made by Rev. Mr. Kleine before a convention of bee-keepers in Prussia, translated for the AMERICAN BEE JOURNAL and published in the number for September, 1870. But, as all interest in Mr. Lambrecht's discovery seems to have passed away, I conclude there was nothing in it better than that which we already possessed.

I think it possible that the hyposulphite of soda, suggested by Dr. E. P. Abbe, (A. B. J., vol. 6, p. 97,) would be a valuable remedy if any easy method could be devised of bringing it in contact with everything containing the disease. I thought I had cured a foul broody stock of bees with it, but unfortunately, before I could be really certain of it, I re-introduced foul brood into that hive and several others by feeding with honey containing the disease. The hive with which I experimented had brood in four frames, all of which was more or less affected. My atomizer was a very poor affair, but the best I could get. I cleansed all the cells that I could see, containing dead brood in the way described by Dr. Abbe. To be certain as to the effect of the remedy, I marked a good many of the cells out of which I had removed the putrid matter, and found that the bees

immediately cleansed them out, and the queen deposited eggs in them which produced healthy brood. But, though I could hold the disease in check, I could not entirely remove it. Upon closer examination I discovered that the disease was much more widely extended than appeared at first sight. I had been misled by the descriptions of its appearance which I had read. I found that a great many unsealed larva were dead, and it required close inspection to determine that they were not alive. The live ones were elastic and showed signs of life when touched, and had bluish colored heads, but the dead ones were flabby, and had a pale pinkish appearance. A great deal of the sealed brood which was dead did not show the caps of their cells sunken and perforated. On the other hand, I could often detect the dead brood by the caps being a little puffed. On removing the caps the cells were found to be full of matter resembling cream. Seeing that I was not likely to reach all the dead larva with my disinfectant, I determined to go through the four combs regularly cell by cell, carefully unsealing every one that was sealed. It was a tedious undertaking, and took me two whole days to accomplish it, but it lessened the disease very much.

After a while, however, diseased cells appeared in all the combs. I then destroyed two of them and went over the other two again in the same way. After giving sufficient time for foul brood to make its appearance, I made several examinations and found none, and thought I had made a cure, when I fed the infected honey to them as before stated. It was then so late in the season, I was obliged to abandon the experiment.

With the treatment recommended by Mr. Quinby I have never failed. I have had as high as fifteen diseased stocks at a time. The hives, frames, bees, honey, and wax are all saved, and the greatly improved condition of these stocks from the extra pains taken with them, caused by frequent examinations, almost compensates for the trouble and loss attending the disease. The most prosperous colonies I have in my apiary are some of those that had foul brood. So that, though it once terrified me with the fear that I should lose all my bees, (about 100 colonies,) I now dread it very little.

D. BUREBANK.

Lexington, Ky., May 27, '73.

[For the American Bee Journal.]

Old or Young Bees, to Winter.

MR. EDITOR.—I see that there is a strong desire in some of your writers to go for somebody or something, and, as I was foolish enough to express my ideas in the JOURNAL on the subject of wintering bees, it seems to be necessary for me to reply to some remarks on that subject. Mr. Novice has succeeded in wintering

a very old swarm on sugar-syrup, and has lost a young one on honey. I do not see the point, unless he thinks old bees better to winter than young ones; but his statement does not prove any such thing, as he didn't try the syrup on the young bees. Now we, as well as nearly every bee-keeper in the land, know that crushed or loaf-sugar makes the best feed for bees, and I have no objection to his so stating in every article that he writes; provided, that he will cease to try to prove that honey is so poisonous that it is sure death for bees to eat it. I am getting afraid that he will convince some of our customers, and spoil our market? Who would want to give honey to his children, when he was sure it would kill bees? We do not raise such honey in Minnesota.

It is claimed by most of the writers on bee-culture, that the natural life of a worker-bee, in the working season, does not exceed sixty days; and some claim much less. Now, Mr. Wurster has wintered a swarm of bees that were one hundred days old when he put them into winter quarters. He says that there is not one particle of foundation in the old bee-theory—his experience proves it. Now, let us see if his experience proves as much for others as it does for himself. He says that when he opened the hive in March, after their being in the cellar five months, they were considerable stronger than when he put them into winter-quarters. Now, did they not rear those bees, and were they not young, and had they not taken the place of the old ones, which, he says, were few in numbers? And does he not say that he found at that early day, 7,520 bees unhatched? Now, I ask, does not his experience prove positively that those bees bred up, and that he absolutely wintered a young swarm instead of an old one? Let me say to Mr. Johnson that I prefer bees to winter that are reared in October to old ones. I see that the strong case that he makes out is not for or against the old bee-theory, but in favor of good honey, of which we have an abundance.

J. W. HOSMER.

Janesville, Minn.

[For the American Bee Journal.]

Echoes from Maine

In the April JOURNAL, "Novice" seems a little nettled at the sly but vigorous thrusts of that prince of bee-keepers, Gallup, who has not forgotten the ridicule with which "Novice" greeted his proposal to furnish information for making his new hive for one dollar, which offer was undoubtedly made to ward off the innumerable letters of inquiry that he knew would be addressed to him before he had perfected the hive and written a full description for the JOURNAL. "Novice" must not forget that "those who live in glass houses should

not throw stones." It will not do at this late day to arrogate to himself *all* the knowledge and disinterested benevolence pertaining to any profession or subject. When a person becomes eminent through legitimate means, it is right that he receive the applause of the world; but when such a position is used to "turn an honest penny," and no opposition or rivalry tolerated, then people will consider the case from a worldly point of view, and judge accordingly. It is just here that "Novice" presents his weak point, and those whom he has so mercilessly punched have been quick to retaliate, while the readers of the JOURNAL laugh at the inconsistencies presented. We do not object to these harmless skirmishes, but on the contrary rather enjoy them, and certainly we can see no objection whatever to the practice of allowing all who are confident that they have a hive, or any other device, interesting to bee-keepers, the privilege of describing them in these columns, whether they "have them for sale" or not, and we rejoice that the utmost freedom in this respect has been given since the foundation of the JOURNAL.

Well, Mr Editor, away down in Maine we are just emerging from another long, cold and tedious winter. Since December 1st, 1872, there has been uninterrupted sleighing, until this week, when runners are giving way to wheels. Yet, notwithstanding the unusually long season of cold, our bees are coming through in fair condition. We put six stocks into the bee cellar December 1st, leaving three very strong and heavy stocks in the bee-house, one of which was placed in a large dry-goods box, and thoroughly packed with straw, the entrance being left open. About March 1st the bees all died—starved to death—leaving about thirty pounds of honey in the frames. The cap of another hive was filled with straw, packed on woollen quilts, which was raised half an inch above the frames. This stock got through to March 1st very well, but then the bees died off rapidly, and we took it into the cook-room, placed our wire flying cage to the extreme end and let the bees enjoy themselves for several days. After the combs were dry we removed it to the cellar, but the bees dwindled away to a mere handful. The other stock was in one of Allay's Bay State Hives, and was prepared for winter by removing the honey boxes and filling the case with straw. The bees in this hive came through in fine condition, and it is now our strongest stock. All of the six hives that were put in the cellar December 1st wintered safely consuming but little honey and losing but few bees. One of these hives was very small, containing but four frames six by seven inches, and we did not feed them until the last of March.

GEORGE S. SILSBY.

Winterford, Me., April 16, 1873.

[For the American Bee Journal.]

A Beginner's Experience.

I am but a raw recruit in the little army of American bee-keepers, this being my second year's experience. I have found pleasure and deep interest in the study of Quinby and Langstroth, with first lessons and text-books, and the leading bee journals of the country. My beginning was with one swarm in a box hive, increased to three the part summer by natural swarming. Had them transferred to frame hives in August, and the Italian queens given them by our excellent friend and patron bee-keeper, Mr I. M. Marvin, of St Charles. Received about seventy pounds of honey this year. To these I added in the month of November following, by purchase ten swarms of blacks in box hives, and put them all in a dry, dark cellar, November 24, for winter. All came out the first of April last in fair condition, with one exception, resulting in the loss of the hive, but saved the queen—my best Italian—by placing her in another stock purchased for that purpose. Transferred the blacks to frame hives during the time of fruit blossoms, early in May. All resulted well, and I soon began to make swarms by taking two frames of brood and adhering bees each from several hives, and placing them on new stands and giving them a capped-over Italian queen-cell. Increased to twenty-five stocks, but the season for honey being so poor, and not wishing to go too fast, made no more swarms, but Italianized the balance of old hives.

At the close of the honey season weighed all the hives and marked the weight on the caps of each, and all not having twenty-five pounds of stores were fed sugar-syrup up to that weight.

The three old Italian hives gave me more surplus honey than all the ten blacks combined.

Having a new Peabody Extractor and wishing to make it useful, and finding one of our neighbors preparing to brimstone several hives, we proposed to do the job for him (minus the brimstone) for the bees and empty combs, which offer was gladly accepted. So, on the 9th day of October last, we repaired to the farmhouse and drove out the bees and tied them up in snug, clean, empty boxes, each swarm to themselves of course; then carefully removed the combs, uncapped the sealed honey, and in a short time had a nice lot of empty combs, (except the beebread, which was not disturbed), and all done to the entire satisfaction of the good farmer, who was well pleased to have us save the lives of so many innocent little busy bees, and give him his honey in so nice a shape. Well, Mr. Editor, we brought those bees and combs home, and, after transferring the combs to frames, run the bees in, making seven strong swarms, as to bees, but no honey. So we let them have a day or so to clean up and set things in order, when

we commenced feeding a syrup made of ten pounds extra C sugar, dissolved in four quarts of water, with cream-tartar or cider-vinegar to prevent granulation, boiling and skimming the syrup before use. Fed from two to four pounds per day to each, thus enabling the queens in every hive to fill two to three frames well with brood, and also giving time for evaporation and capping over the same. We fed them from fifteen to twenty pounds of sugar each. These hives were housed in my cellar on the 16th day of November last, together with my twenty-five other hives, and at this date, February 14th, appear to be as healthy and with as few dead bees as any one in the cellar.

This, Mr. Editor, is our test of the sugar-syrup principle, and, if it succeeds, we will not hesitate in future to use the extractor most freely, late in the season as well as early.

JESSE OATMAN.

Dundee, Kane Co., Ill. Feb. 14th, 1873.

[For the American Bee Journal.]

More About Rape as a Honey Plant.

MR. EDITOR.—I am daily receiving letters (my brother being absent) in regard to the culture of rape. So, herewith, I enclose you a circular that will give the desired information; and, if it will not occupy too much of your valuable space, you would, I think, do the bee-keepers a great favor by publishing it in your next number. My brother referred bee-keepers to the Report of Agriculture, but they do not seem to heed it. A detailed report is there given of its culture, but as many bee-keepers do not possess a copy of that work, this circular will be of value to them. Bye-the-bye, I hope Mr. Hunt, of Appleton, Wis., will give us a word on the subject, he having lived right where it is raised.

I see that Mr. Gallup has "come out" on my "lamentations" in the April number—at least, I suppose he means me, by giving me the name of "Drusche." Well! well!! I have seen my name undergo many changes, as if under the control of a magic wand, but this is the greatest contortion it has ever been called upon to sustain. Still, "what's in a name?" Mr. Gallup says "forty-six stocks of bees are rather a bad burn." Nay, nay, friend Gallup, it was rather a bad freeze, at about seven different times, of more than twenty-three degrees below zero—not much burn with the thermometer in such a weak condition.

He speaks about cautioning bee-keepers in the back numbers of the JOURNAL, etc., but the caution was useless to us, as we did not have the A. B. J. at that time; consequently, did not hear or heed his warnings. I did not particularly intend to give reasons why my bees died; I only endeavored to express the idea that they could not have died because there was not enough young bees, as Mr. Hosmer says, but, if

Mr. Gallup knows, he will do us a great favor by imparting the much desired information to us, and we will hold perfectly still while he beats the knowledge into our somewhat thick-shelled cranium.

I should like to make many more remarks, but I suppose, Mr. Editor, you are already grumbling at the length of this letter. I cannot, however, forego the pleasure of stating that the bees we bought are doing well. Who cares for the past, so long as the present and future looks bright?

Yours in good hopes,

J. D. KRUSCHKE.

Berlin, Wis., May 16th, 1873.

[Circular.]

A WORD TO FARMERS.

The experience of the past year, not only with respect to the price, but especially the long settled fact, that growing wheat year after year on the same land impoverishes the soil, ought to have led thinking farmers to the cultivation of other products, which would put a stop to the total enervation of the soil. There are various products of agricultural industry which not only do not weaken, but, on the contrary, strengthens the soil and secures to the farmer just as good, and even a better return, than wheat. Among these, and best understood, are the breeding of cattle and the production of butter and cheese, than the raising of leaf crops, such as clover, peas and rape seed, which, by covering the ground in mid-summer with a thick cover of leaves, increases the fertility of the soil. It may be said that all localities are not adapted to the breeding of stock, especially in newly settled regions. But clover, peas and rape seed can all be raised in new ground as well as wheat, and with equal or greater profit. It is the cultivation of rape seed in particular, to which I wish to call the attention of my fellow farmers, for this branch of agriculture has not as yet received the attention which it deserves. The reason for this may be partly found in a want of knowledge of the method of cultivation, and partly in the belief that soil and climate are not favorable; but soil and climate are favorable, as may be seen in the town of New Holstein, Calumet county, where many thousands of bushels of rape seed are grown yearly. The cultivation of this crop is also extending in the neighboring towns. The price of rape seed has remained steady at from two dollars to two and a half per bushel, and the average yield per acre varies from ten to eighteen bushels, at times reaching from twenty to twenty-five bushels. It seems to me that my fellow-farmers will be pleased at having their attention called to a product which always finds a ready cash market, for the reason that the production is insufficient for the demand, and must be for many years. Again, it is a product which does not weaken the soil, and

helps the farmer to bring the land to such a state of cultivation and fertility as will insure good crops for several years. I will now give some directions in regard to the cultivation of rape seed for those who are not acquainted with it. The time for sowing it is from the middle to the end of June. This gives the farmer time to prepare his land, after the rest of the sowing is done. The harvest falls from the beginning to the end of September, a time when all the other harvesting is finished. It may be cut with cradle or reaper; then raked into bundles, but not bound. After ten or twelve days it can be thrashed either in a barn or on a floor made of boards in the field. May be trodden out by oxen or horses, or thrashed with a flail. It can be cleaned in an ordinary fanning-mill. To make sure of a good crop, put on 100 to 150 pounds of plaster to the acre. The plaster can be sowed with the seed and dragged in. A piece of land producing rape seed one year, will certainly yield the following year, from five to eight bushels more of wheat to the acre than it will after any other kind of grain. Two quarts of seed is sufficient for an acre. Rape seed can be had at Hamilton & Foster's Oil Works in Fond du Lac. The oil is valuable for machinery, and can be used in woolen and cotton mills. The oil-cake makes a splendid food for cattle.

CLAUS OESAU.

New Holstein, Calumet Co., Jan. 1870.

[For the American Bee Journal.]

MR. EDITOR.—So much has been said by the bee-keeping fraternity about cheap hives, cheap bee-houses, wintering cheaply, etc., that we propose, with your permission, to give our views.

We think bee-keepers make a mistake in trying to get something out of nothing, or in other words, they wish to make money out of bees, and have nothing invested in them. They seem to think because the bees are supposed to steal their living, that we should steal a march on them by giving them cheap houses to live in, cheap winter quarters, and cheap food to live on. Right here is the secret of bee-keeping. On the one hand they say it costs nothing to keep bees, on the other it is the most profitable business extant, and we are apt to get as far along on these two extremes as possible. It has been said there is no royal road to wealth, and if we try to get too much for nothing, we loose sight of the many small things that go to make up the one great one.

Nowhere else does a man expect to get as much for as little expended as does the bee-keeper. The farmer if he is successful, expends double the amount for food and lodging. The merchant builds costly blocks and surroundings to make his goods attractive. The professional spends years of time which is money, in fitting up his store house; and so in every department

a person must have some principal invested, to be able to get interest.

Of what use is a hive that can be had for nothing, if we can make nothing out of it? We claim that more than one-half of the bees that are lost are lost on account of the hives they are put into, one-fourth on account of their winter repository, and the remainder by carelessness, except a few perhaps by foul brood disease.

To prove the above assertion, we will show that in order to get hives up as cheap as possible, they are made as small as possible. That they are made tight and warm we have no doubt, too much so. The hive being no protection in itself for out door wintering, we must have a repository for wintering them; in, which of course must be cheap too. Then the bees are crowded into it, providing there were enough left from last winter's stock; and as great loss necessitates great gain the season following, so a part are weak because of so many divisions. The consequences are the weak must either freeze, or the strong become overheated.

Now would it not be better to use the same reason in the case of bees as in every thing else? "The laborer is worthy of his hire." Would it not be better and cheaper to pay five dollars for a hive that will winter a stock through or pay five dollars for five hives and loose two or three stocks out of the number? would it not be better and cheaper to pay one hundred dollars to build a good repository that would winter say fifty stocks, than to have one furnished gratis and loose twenty-five during the winter?

We believe that with a suitable hive and bee-house, bees can be wintered as safely as any other stock. Further, we believe that the loss of the past two winters in bees, can be accounted for, notwithstanding so many conflicting opinions. The fact is, they are all right, but no one in particular, but unite all of their theories and make one grand theory, and we have the answer, "What is the matter with the bees?" One gives the old age theory, and adds a unit. In the natural order of things, bees will die like every thing else. Another says, "honey dew." In some sections that too might tend to debilitate. One has too much ventilation. Another not enough;—both partly right. Dampness is given as a cause; and epidemic comes in for a claim.

Now there is not one of these theories that can be applied universally as the cause of so many bees dying the past two winters, and yet all have helped to make up a cause, each in its own section, and according to circumstances. Now you can all see that we have a theory; or we would not try to knock aside yours. So we will give it, although it may not be new, it may be to some, and if it is not right it may serve to get on the right course. We will give it all in a "bunch" and each one can pick out his favorite theory, and there will be nothing left.

First, a few old bees die (natural consequence) they fall down on the bottom of the hive, and among the combs. An unusual cold spell of weather comes on, dampness is caused in the hive, (imperfect ventilation.) Breeding is commenced, (I wonder where the nurses are.) In the mean time decomposition of the dead bees, and filth caused by dampness is going on, which is absorbed by the honey. (Honey dew might come in here.) The bees become diseased by eating impure honey, which only increases the trouble.

We have yet to see a colony of bees that have the dysentery, where the honey is in its natural state, and no mouldy combs, no dead bees, no unusual dampness in the hive. There are some stocks that are lost by carelessness, such as freezing, starving and queenless, which should not be placed on the sick list. The remedy for all this is, first, do not have the comb go down within two inches of the bottom, and the sides of the comb should be free to let all refuse fall to the bottom. The wall of the hive should be double to equalize the temperature within and prevent an excess of moisture. Place this hive, with plenty of bees and honey, and with a good queen, in a cellar where the thermometer stands at 35° above and we warrant them to winter safely at less risk than any stock kept on a farm of the same value.

Some will object to putting a double walled hive into a bee-house. "It takes up room." What if it does? we can then enclose more money in property at less cost than any other live property. The more safely the bees can be wintered, the more valuable they become, and the old adage is true in this as in every thing else. "What is worth doing at all, is worth doing well."

SESEAYE.

[For the American Bee Journal.]

Cheap Hives.

MR. EDITOR:—I notice in the A. B. J., May, 1873, a communication from Mr. Quinby on "Cheap Hives," which leads me to a remark or two on the subject with your leave.

The annual expense of a hive is not the first cost of the hive and of the right to use it; it is but a small part of that expense. A well constructed hive, if properly secured, will last twenty years. Some years since an account was published in the *Country Gentleman*, of a hive, I think in West Bloomfield, N. Y., from which the proprietor had taken nearly 100 pounds of surplus annually for many years, I think thirty. If the original cost of his hive had been \$10.00, this would have been in thirty years divided into 33 1-3 cents annually. The interest on ten dollars annually, seventy cents, would bring up the annual expense of hive \$1.03 1-3 cents.

The annual cost of the \$1.00 hive would be

interest seven cents, one-thirtieth of a dollar, .03 1-3 cents makes .10 1-3 cents annually; an annual difference of 93 cents. This difference of ninety-three cents secures \$20.00 difference annually. If we now add the time and trouble of extracting and preparing 200 pounds of extracted honey for market, I think all would agree as to the cheapest of the two hives. If we further consider the fact that the hive and a sample box is \$5.00, and the \$5.00 for the right to make and use is \$5.00 for one apiary, the purchaser may add as many hives as he pleases to place in his field. This may reduce the hives one dollar each if he uses five hives, or fifty cents if ten hives, or twenty-five cents if he uses twenty hives, and so on, manufacturing them himself, if he pleases.

I would not intimate that an average of two hundred pounds could be secured by all the hives in an apiary in either case. I have secured this in but one hive, in one season. The bees are hybrids, and the hive has bars instead of movable frames. I have no more care and trouble in managing them than in managing an old-fashioned box hive, save the taking off of boxes. It takes rather more time to take off 200 pounds in boxes than to take off twenty pounds.

My next best in one season gave me 174 pounds in boxes. They were native, or black bees, and in a hive with movable comb frames. I don't know if they had been pure Italians but they would have done better.

My best was placed in the hive in 1867, and is now as promising of success this season as I have ever known it.

Postscript.—My friend, Novice, says: "Mr. Hazen forgets that he himself mentions in the *Rural New Yorker*, having given colonies young bees to strengthen them, so we need not mention other sources of information."

Had Mr. Root, (Novice) given my language it would have been more readily apprehended by me.

I have several times purchased colonies in swarmer hives, and, on the issuing of the swarm, have placed the new swarm on the stand where the old one stood, then cut out all the worker brood from the old hive, placed it in a box near the entrance to the new swarm; and split up the old hive for kindling wood. I should probably do the same with Mr. Root's hive if I had a colony of bees in it. One important element of success where we are dependent upon white clover and early flowers for surplus honey, is a large working force in the early part of the season. This I think a very important point.

With only a medium colony in a new hive with the empty hive to fill with comb at the commencement, neither the old colony or new, would do much by way of surplus. Put the working force of both into one hive and handsome surplus may be secured.

Mr. Root must be aware this is not taking frames from one hive and brushing off the bees before another to gather a large surplus from one, and have the other weak and inefficient.

Flings and flurries about patentees and patent rights weigh but little with the considerate. If the encouragement of improvements given by the laws of the country are improper or unwise, the government may be counseled to repeal the laws giving them.

Does Mr. Root take his scythe and whetstone into his meadow, or his sickle into his wheat-field to cut down his grass and grain because mowing and reaping machines are patented?

Is it more dishonorable to secure the advantages of an improvement in one useful article than in another?

Albany, N. Y.

JASPER HAZEN.

[For the American Bee Journal.]

Simplicity Bees, and Chromo-Lithographical Apiculture.

MR. EDITOR:—I have had sent to me a sample copy of the *Bee Keepers' Magazine* for April, 1873, "devoted exclusively to Bee Culture," from which I have learned much, and one very disagreeable lesson, which is, that I am more ignorant than I thought, for I did not before know that chromos and lithographs were so necessary to bee-keeping that one-fourth of the space in a magazine "devoted exclusively to bee culture" had to be "devoted" to them. Please inform me how to use them. Do you put the pictures in the hive, or outside? I see that they have to be put in frames, and therefore infer that they have to be put in the hive, if so, does there have to be a separate room for them?

But, Mr. Editor, while Mr. Dadant has been all the way to Italy for the best bees, and a great deal has been said about improved and new breeds of bees, the four enterprising editors of the *Magazine* have got ahead of all of them. On page 143, in a kind of catechism, some fellow is examining the editors on, he asks them to "describe the wings" of the bees. They all answer in a single breath: "There are four, two attached to the thorax and two to the abdomen," etc.

My bees are not a bit that way. They have not got *nary* wing on the abdomen, all four are stuck right up on the shoulders, and have no propellers behind. I suppose it is a great improvement, particularly if the hind wings are reversed, as it enables the bees to fly back home without putting them to the trouble to turn round, and it must be a great advantage when they "come at you" to sting, for they can do it far more effectually than the old foggy bees that have to make a new move of their bodies in order to get the sting in the right position, for they can straighten themselves out and come

like a dart, and drive the sting home every pop. It is a great trick in case of accidents, too, for if the bee gets cut in two both pieces can fly home; the only trouble being, that the abdomen, having no legs, could not crawl into the hive!

The four editors that have got up this bee, do not advertise it for sale, but I understand they propose to give them away to all who will send enough money to pay for either of their wonderful publications and the "5 superb chromos." I don't know how much it will take, but if the editors continue to feel like the old negro in the classical anecdote they tell in their baby department, I guess they will "luf 'em down easy."

Yours in

SIM PLICITY.

P. S.—Would it not be a good idea to scatter the legs a little as well as the wings? SIM. P.

N. B.—And also have a *stinger* on both ends.

S. PLICITY.

Addenda.—Them bees are as handy as the old hunter's dog, that ran so fast that when he struck a sapling with his head, he split himself in two equal halves from nose to tip of tail. The old hunter put the two halves together, but in his hurry and confusion put two legs up and two down. The pieces grew together, and he found he had improved his dog wonderfully for he ran as fast as ever, and when one pair of legs got tired, he turned half a summersault and went in on the others, and thus he could run forever, if necessary, and "never tire." I must have some of them reversible, back-action bees, even if I have to buy the chromos to get them. You ought to have some, Mr. Editor.

SIMEON PLICITY.

[For the American Bee Journal.]

From Blackhawk Co., Iowa.

AMERICAN BEE JOURNAL:—As you are such a capital fellow for informing us in such grand style in all matters relating to bee-culture, and in keeping us so well posted of the doings and sayings of brother bee-keepers when collected together in bee-societies, we thought we would show you that this cold spring has not frozen the interest in bee-culture out of us in this part of our grand young Iowa, and that our specialty is not likely to have the go-by for lack of interest.

At a meeting of a goodly number of the bee-keepers of this (Blackhawk) county, held in this city May 14th, a constitution was adopted, giving our society a name (the Blackhawk County Bee-keepers Society), and stating that "its object shall be for mutual instruction, co-operation, protection, and to promote the interests of bee-culture." F. S. Engledow, Cedar Falls, was chosen President; C. P. Hunt, Waterloo, Vice-President; Dr. A. B. Mason, Waterloo, Sec'y; and Dr. J. A. Bickley, Treas.

Our next meeting is to be held in this city, on the last Wednesday in June; and our annual meeting on the second day of the fair of our County Agricultural Society. The secretary was instructed to put our society in communication with the N. A. Bee-keepers' Association; (and Mr. Editor and President, you may just consider this obeying that instruction, if you please.) Our proceedings were ordered published in full in our six county papers, and notice of our organization to be given to the different bee-journals and papers. Don't you see we intend to let our light shine?

About three weeks ago in looking through my colonies of bees, I discovered that my black colony (I have but one colony of blacks,) were fighting their queen. They had her by the wings and legs, and anywhere they could get hold of her, and I found it was quite difficult to release her. I replaced her on a different card of comb three times, and they seemed bound to commit murder. I believe they knew that our state had advanced so far in civilization (?) that people don't have to be hung for murder. I then enclosed her in a queen cage just as I would to introduce any queen into a strange colony, and in about seven hours (I was too busy to release her sooner) opened the cage and let her walk out on a card of comb among the bees, and they commenced to make bows to her and accepted her in the very best style, and the next morning showed that the queen was not afraid of work, for she had added at least 2500 eggs to the stock previously on hand.

Can any one tell me why these bees tried to destroy their own queen? I have not Italianized this colony because the queen is as prolific as any Italian I have, and the workers will gather honey whenever the Italians can; and they were the first to raise brood this season, and are doing splendidly in that line yet.

A. B. MASON.

Waterloo, Iowa, May, 1873.

[For the American Bee Journal.]

Our First "Swarming."

Not to experienced apiarians do I relate the story. I would humbly beseech rather that they please to not listen. But if among lady bee-keepers there be one who knows as little, practically, of "natural" swarming as did I on the morning of May 27, 1873,

"To her my tale I tell."

The morning was cool, cloudy, breezy, and I said to sister Nellie, as we rose from the breakfast table,

"We shall not be able to divide the bees to-day, I fear."

"Will it matter?" she asked.

"Oh, no," I replied, serenely and confidently. "They will not think of emigrating under a week—their preparations are but just begun—

and in cool weather they are better off as they are."

As the morning advanced the wind died away and the sky cleared. At noon it was bright, warm and still. I noticed at this time that the bees at one hive were very quiet—scarcely a bee in sight—while at the other they were humming merrily. The first mentioned being the stronger colony, I wondered a little at their inactivity; its real meaning was clearly apparent some hours later, especially after re-reading a forgotten passage from "Langstroth." "If in the swarming season, but few bees leave a strong hive when other colonies are busily at work, on a clear, calm, warm day, we may look with great confidence for a swarm, unless the weather proves unfavorable."

An hour or so after noon, thinking the bees were making an unusual and unnecessary amount of noise, I stepped to the door to see that at this but recently so silent a hive, there was now quite a commotion. Many bees were whirling about and over the hive, while more were pouring forth in an unprecedented way as to numbers and hurry. Come forth in a very large stream they could not. The evening before having been cold and stormy, I had shut the fly-holes and somewhat contracted the lower entrance; and as the morning had been cloudy and the bees quiet, no change had as yet been made. Now, as I stood gazing at them, spell-bound at my first surprise, there flashed across my mind the query, "are they swarming?" But it was only to be at once dismissed. For didn't I know that they were not ready to swarm? Hadn't I looked into the hive but a day or two before, and found in the most advanced queen-cell only an egg?

My second and accepted thought was this, that the sudden warm sunshine had given a general impetus to honey gatherers and young bees to go forth, and that the unusually narrow door-way excited and troubled them.

Still there was no cessation to the steady outward flow, and in larger and yet larger circles around and about the hive. *Something* must be wrong!

"Nellie!" I called piteously to sister in the next room, "I don't know what is the matter with my bees!"

She hurried to the door. "Why, they're swarming!" she exclaimed with decision.

That settled it. She spoke as one who knew, and my own rejected first impression came back with overwhelming conviction. They were swarming. What should I do?

I had no course of action marked out, because I had long before determined that my bees should not swarm. Most excellent care would I take to prevent that in these great woods, where, if they went beyond the clearing it might be impossible to follow or to find them. I had a vision of them now, sailing off over the tree-tops beyond my reach, and I felt—

I felt only that they must be stopped! now! at once!

Suddenly I remembered to have somewhere read, that the queen often does not come out before a third or a half of the swarm has emerged. It was then possible, it might even be *probable* that she was still in the hive. If so she should either stay there or be captured at the entrance.

Seizing a pail of water I rushed forth hatless, veil-less, glove-less into the midst of the throng of run-aways and began sprinkling them as they emerged. But first, with curious and absurd inconsistency—seeing how much faster they wanted to come out than was possible, and pitying their crowded discomfort—I involuntarily bent down and opened a fly-hole, and so had two streams pouring forth instead of one! (Nellie will never forget, or cease to laugh at me for *that* performance, I fear.) They beat against my dress, they whizzed by my ears, brushed my hair, grazed my cheeks, but I stood my ground, trying to watch both openings at once for the queen, and sprinkling the water more and more copiously as I saw that it produced no effect. I was beginning to despair, for many bees were washed down and I didn't care to drown them, much less did I wish to risk drowning my queen. Just then came a happy inspiration.

"Hand me that wide board, quick! quick!" I cried to Richard, (who is a little afraid of bees.) He cautiously shoved it within my reach. Holding it so as to throw a shadow over the entrance, I continued the sprinkling. The effect was magical.

"It *is* going to be something of a shower after all!" "The sun is under a cloud, and it rains faster than ever!" Telegrams of this import must have been sent through the hive in a twinkling, for all at once there was a sudden, an *entire* stop to the outward rush.

Then for the first time I ventured to draw a long breath, and then, too, I began to question doubtfully, if it had not been a very foolish and useless, as well as an unsafe proceeding? Was the queen out or in? The bees that had been washed down were picking themselves up rapidly, and I soon became convinced that she was not among *them*.

But over our heads quite an army of bees were whirling and swarming, now this way, now that. Once we accompanied them half way across the woods, then back to the vicinity of the hive. Suddenly they separated widely and came down to the ground, very evenly scattered over a large surface. I knew that they had missed and were looking for their queen, and I wondered if their anxiety could be half as great as mine. Rising again, they again seemed starting for the woods. But immediately returning, once more they sprinkled themselves far and near over the ground, somehow, Nellie suggested, giving one the ridiculous impression of "going down on their hands and

knees" to make an effectual search. Evidently it was to them in some way a satisfying one, for all now rose as by one accord and came hurrying back to the hive, pouring in as fast as possible and covering the whole front with a black sheet.

So soon as all had settled, we lifted the hive from its stand and placed an empty hive in its stead. Then, after arranging the frames and putting in two combs of brood and honey from the old hive, we (Nellie and I) began a careful search for her missing queenship. To our joyful surprise it was not a long search. We found her as composed and dignified in demeanor as though nothing had happened, and with very little trouble we transferred her to the new hive. We found several queen-cells, the most advanced containing the tiniest of worms.

It was then, I think, that I for the first time discovered that I had forgotten my bee-veil! Of course I walked into the house for it at once.

The rest of the work, the apportionment of the remaining bees—every bee was at home—was a somewhat perplexing business. However, I used all the judgment I *had*, and if the division was not made quite as well as the bees could have made it, everything has seemed to go exactly right with the new colony thus far. With the old colony, too, all was well until—but that belongs to another chapter.

Perhaps some one, as inexperienced as myself, may be interested to know that from first to last the bees were on their very best behavior, nobody was stung.

We found a nucleus from the other hive the same afternoon, for interesting, exciting, and on the whole satisfactory as this experience had been to me, I felt no desire to repeat the same with another swarm, and in conclusion would say that I do not venture to take the responsibility of advising any lady bee-keeper to take the course of action above described.

CYULA LINSWIK.

[For the American Bee Journal.]

The Dealings of Prof. Chevalley.

Mr. Clarke and another bee keeper have communicated to me letters from Prof. Chevalley, of Bellinzona. I know that several others have received such letters, and I have read in the French paper, *L'Apiculteur*, for March, an article in which the editor of that journal says, like Prof. Chevalley did in his letters, that: "As I was unable to buy queens in Tesin on account of the low price I had offered, I was forced to get all I could find in the neighboring of Milan, in second choice queens, as to the Alpine characters."

In answer to that article, Count Visconti L. Taliceto, editor of the journal of the Central Society of Italy, in the number of April, p. 98, writes:

"We cannot understand whether the correspondent of the Parisian journal wishes to attack M. Dadant's speculation, or whether he wishes to *qualify* the race of bees that exist in Italy, and especially in Lombardy. In the second hypothesis his assertion would be erroneous. In Milan, and in High and Lower Lombardy, in the districts of Central and Lower Italy, the bees have golden stripes; they are large, gentle, active, and, in a word, possess all the characters of Italian race. They are by no means inferior, if not superior, to the bees living in the Alps, and in the Canton of Tessin, as it is easy to ascertain by visiting the apiaries scattered in the different districts of Italy.

"As a proof of our assertion, suffice it to say, that the renowned Prof. Mona, of Bellinzona, who is well known for his business in the sale of Italian queens, comes to Lombardy, and even as far as the neighborhood of Milan, to buy queens! Would he come so far if our bees were not very beautiful and pure?

"We say this, not for our subscribers, who know well enough, the race of bees of our country, but for the foreigners, who could be deceived by false or selfish assertions.

"As to the queens purchased last year by M. Ch. Dadant, we can assure that they were all of the pure and beautiful Italian race; and we are convinced that they will reproduce in America the Italian bee as pure as can be desired." (Apicoltore, April 1873, p. 98.)

I have narrated in the A. B. J. how I procured the queens. But I am unable to understand why the queens of peasants, taken from after-swarms, are less good than those sold by queen dealers, as Prof. Chevalley, in his letters, pretend they are.

Before starting for my voyage I had resolved to go directly to Milan. But on my arrival at Paris, I received a letter, saying that, on account of the scarcity of honey, it would be difficult to find a great quantity of queens to lay; the second swarms dying by hundreds. In presence of that difficulty I wrote to M. Lafranchi, at Bellinzona, who advertised in *L'Apiculteur*, queens at a very low price; directing him to send his answer to Milan. After reading my letter I thought that it would be better to go myself to Bellinzona, so as to see the man and his bees.

On my arrival at Bellinzona I inquired for Lafranchi; but the man was Chevalley* who had already sent his answer to Milan. He boasted of having received a great many orders from the United States. He was ready to sell me 100 or 150 queens at his advertised price. It was agreed between us that I should send him an order from Milan, if I decided to do so. But after seeing the bees in Milan, I resolved not to buy queens from the apiaries of the Alps.

*Last year it was Lefranchi who advertised queens in "*L'Apiculteur*;" this year it is Chevalley.

At Milan I found a letter from Messrs. Gray & Winder, who had sent Chevalley \$72 in gold five months before, and who had received neither receipt nor queens, (although Chevalley had received the money from the banker,) and who asked me to see him, or to write to him, in order to bring with me the queens ordered. I wrote twice to Chevalley before leaving Milan, but I received no answer.

I sent to Mr. Clarke the letter I received from Chevalley in Milan. He will see that, if Chevalley was unable to send the queens ordered and paid for months before by the American Bee Keepers, he was ready to sell 100 or 150 queens for cash. Perhaps, if I had ordered queens, giving him a part or all of the money before receiving them, I would have been sold, as the Bee Keepers, who have poured their money in his bottomless pockets. This lack of plain dealing on the part of Chevalley, shows whether his assertions are worthy of confidence.

CH. DADANT.

NOTE BY ED. A. B. J.—The letter of M. Chevalley, referred to by Mr. Dadant as enclosed to us, expresses a readiness, under date of July 31, 1872, to fill an order for 100 or 150 queens.

[For the American Bee Journal.]

Jottings.

Mr. Editor and Fellow Bee-keepers:—The experience of the last few years has been sufficiently disastrous to the small apiaries, scattered hither and thither, among the farmers of this vicinity. But while it may be admitted that to successfully winter an apiary is one of the most precarious operations with which we have anything to do, still we need not wonder at much of the loss.

One man, for instance, thinks that the best place for his bees is on their summer stands, and he therefore leaves them unprotected through the rigor of almost an arctic winter, and the result takes off all the profits!

Another has learned better than that, and therefore he moves his bees in the fall, and places them in a sheltered, sunny nook, closes up the entrances, and leaves them till late in the spring; and when he finally concludes to give his prisoners their liberty, wonders that so few leave the hive, and that those few only come out to die!

And still another commences operations in the spring, with a snug little apiary, just right for the exercise of his skill in apiculture. But he practices a "masterly inactivity" till about the month of August, and then "astonishes the natives" by announcing that his bees have not swarmed, but that he has divided them, and thus doubled the number of his stocks. He takes good care of them through the winter,

and fortunately has as many stocks left in the spring as he had the spring before.

Perhaps this pen has jotted enough for the present.

PHONOGRAPH.

Koshkonong, Wis., May 22, 1873.

[For the American Bee Journal.]

Relative Contents of Different Sized Honey Boxes.

When making surplus honey boxes, or giving them to stocks to be filled, there is some satisfaction in knowing beforehand how much a box of any given dimensions will hold when filled. After weighing a great many boxes of different sizes, and figuring it all out, I have found, as a rule, that a box when filled with newly-made comb, and the honey all sealed over, will contain three pounds of honey to every one hundred cubic inches of space contained in the box. Thus, a box ten inches long, six inches wide and five inches deep, inside measure, will contain three hundred cubic inches of space, and will consequently hold nine pounds, when filled as above stated. This rule holds good with any size of box, from about twelve pounds down to five pounds, (smaller boxes than five pounds I have never used.) Boxes of the capacity of fifteen to twenty pounds usually contain a trifle in excess of the above estimate, while those of twenty-five pounds capacity frequently contain two or three pounds in excess. I do not say that the above rule is always absolutely correct, but I have found it near enough correct for all practical purposes.

HENRY CRIST.

Lake, Stark Co., O., April 4th, 1873.

[For the American Bee Journal.]

Comfort for the Persecuted.

MR. EDITOR:—On page 251, Mr. James Weddon speaks of the manner in which he is persecuted, and wishes all the information possible relative in such cases. I would say to him, and all others, that an apiary should be so situated that the bees will not attack horses, cattle, or other domestic animals when passing along the public highway or street in any village. It should also be situated sufficiently far from the bee keeper's neighbors so they will not leave their hives to sting them when on their own premises. When thus located, there is no law that will compel the owner of an apiary to move his hives outside of any corporation. And any witch-hanging or otherwise ignorant and superstitious set of inhabitants of a one-eyed or blind-horse town, or would-be city—it being invariably this class of places that resort to such measures—who may enact a law expelling an apiary from their midst, should be taught the very important lesson of attending to their own business. This can very easily be done, by referring such cases to the higher tribunals, at the same time letting the

bees remain wherever they may be situated when the case is first brought up. The statements usually made by these persecutors are that, the nasty, dirty bees get into their sugar-bowls, their molasses cans, their preserve dishes, and that they will even carry off a little honey that may chance to be in an open cupboard, safe, or pantry after they (the slouchy owners,) have bought and paid for it. Wash-tubs filled with soapsuds, 3 or 4 days old, and set in the sun during the summer, are almost sure to be visited by bees. But such vessels filled with pure, clean water, are never frequented by them, and they do not get into them except by accident, just as many other insects do. And just here the question arises as to what kind of proceedings the meddlers are going to institute against our every day insect, together with the Being who created them?

Such complaints cannot fail to be treated with ridicule and contempt when left to the decision of honest and intelligent jurors. To sum the matter up in a few words: Actual damage must be proved; and any thing that savors of careless and dirty housekeeping, will not be entertained by any intelligent court when entered as complaints against house keepers. I was once threatened just as Mr. Weddon seems to be; but when it became fully known that facts, clearly pointing out actual damage, must be established, by truthful witnesses, the whole matter was dropped.

G. BAKER.

Alexandria, Indiana.

Reports, Experiences, and Opinions.

L. B. Aldrich, Warsaw, Rice County, Minn., writes, May 21, 1873:

THE AMERICAN BEE JOURNAL, in the past four years, has been the means of putting more than \$200.00 in my pocket!

Wm. Stump, of Cincinnati, writes, May 27, 1873:

Last week a copy of your JOURNAL came to hand. I am mightily well pleased with it. It is just what I want. No beans and potatoes theory in a bee journal for me. I want bee matter—read all I get hold of on that subject.

I take great pleasure in bees and their management. Up to this time, however, they have cost me more than I have got for their honey. My apiary house cost \$100. I have had bees for fourteen years. The last 3 years I have had Italians and movable frame hives. At present I have 21 colonies, 14 of which are in the house. They are very docile, and seldom sting me. My house is so arranged that in summer I can keep the thermometer at from 70 to 80. This winter it did not freeze water, kept in a cup as a test. The inventor of the house has had it in use 7 years, and never lost a swarm in all that time. The secret is in keeping them cool and

giving them plenty of room. The coldest weather this winter I opened the hives and found them nice and dry. Their winter stores were syrup made from powdered sugar. This spring, as soon as they would feed, I gave them rye flour and syrup. They went to breeding fast, and now are in splendid condition. At the present time the locust is in bloom. Some of my hives have their boxes nearly full. I have the nicest boxes in this part of the country. They are made with four dressed posts, French plate glass, washed clean, and hold 3 and 6 lbs. Already I have taken off 40 pounds, which was snatched up eagerly at 40 cents per pound.

The winter of '71 and '72 I lost 3 hives by dysentery, which, to my mind, is caused by dampness. This winter I did not lose any, because I kept them nice and dry all the time.

A friend on Walnut hills lost 21 out of 28 hives, mostly by dysentery; another 18 out of 21; two others all last year's swarms, (10) by starvation. I look among bee keepers in this neighborhood of 2 miles, and find there are living about 56 colonies that I know of, about two-thirds Italian.

A friend just in, (Mr. D.) took your name, and will send for a sample number. I want all bee keepers to take the bee journals. I would like them to come out twice a month.

My apiary is in Pendleton, up the river from the city four miles. I have one of the coziest apiaries in the country. I am a coach maker by trade, and have every thing around me in its place, even to scrubbing out my bee house when dirty, and carpet on the floor. Should you ever come to the city call and see me at 55 E. 5th street.

T. B. Hamlin, of Edgefield Junction, Tenn., writes, June 4, 1873:

Bees are doing finely. We are in the midst of white clover and tulip harvest.

Wm. Perry, of Lynnville, Tenn., writes, June 4, 1873:

I am but a recent reader on bee-culture, though an old man, and kept bees for the last forty-five years in the log or gum hive; but from the depredations of the moths and other inconveniences, had almost despaired of, and really was receiving no benefit from, them; not enough to pay for the hives. But last year I purchased the right to use the Langstroth Hive, and am delighted with it. I now have fifty-nine colonies in them, that I think are doing well. I cannot get along without the AMERICAN BEE JOURNAL.

J. B. Rapp, of Owensville, Ohio, writes, June 13, 1873:

We have tons of honey going to waste for want of bees to gather it. The face of the earth is white with white clover blossoms, and rich in honey.

My bees have filled their hives, and I intend using the extractor to-day.

Long live the AMERICAN BEE JOURNAL! I would as soon try to farm without a plow, as to keep bees without the A. B. J.

J. W. Johnson, of Shelbyville, Ill., writes, June 21, 1873:

Editor AMERICAN BEE JOURNAL, Dear Sir:—Allow me to say that my bees wintered well—first-rate. I left them on their summer stands, with no protection whatever, *all upward ventilation completely cut off*, thermometer one day indicating thirty-one degrees below zero. While this process may be in violation of the rules laid by the fathers and mothers of bee-culture, yet while I can go into winter quarters with twenty stands, and come safely through as long and severe winter as the last, I shall give little heed to upward ventilation. Bees, left to themselves, invariably close their hives above so as to effectually prevent the upward escape of warm air, of which they certainly have little enough in our cold prairie land. At least, this has been my experience. Bees have not done well so far, or especially, during fruit blooming time. Too much wet and cold. Yet mine are full, and I am using the extractor.

F. H. Harkins, Home, Brown County, writes:

The honey season so far, in this section, is a repetition of last year, namely: the pets are not making their own living. Too much rain. Out of 85 stocks I am now feeding 45; but I know, from experience of last year, that it is honey lent at a big per cent., for last year I fed some 80 pounds to 30 stocks out of 72, and received from the whole 5 barrels extracted of 42 gallons each, and sold about \$140 worth of comb honey at 25 cents per pound, saying nothing of what was used in the family and given away.

Year before last I did better, for out of 35 stocks in the spring, I extracted 3,800 pounds, and increased them to 72, whereas last year I only increased 15, losing 2 each winter.

CONTROLLING SEX IN BUTTERFLIES.—A suggestive article as to the possibility of controlling sexes in butterflies has been communicated to the *American Naturalist* by Mrs. Mary Treat, and from the results of numerous experiments she finds occasion to believe that the larvæ to which the freshest and most tempting food was supplied in unlimited quantity nearly always developed into female butterflies, while those for which the supply of food was limited, almost uniformly proved to be males. Dr. Packard is, however, inclined to think that the sex of this insect, as well as all animals from eggs, is determined at or about the time of conception, or, at least, early in the embryonic condition. In the honey-bee, especially, it has been proved that the sex is decided at the time the egg leaves the oviduct. The sex in man, according to Koelliker, becomes fixed toward the end of the second month of fetal life.

THE AMERICAN BEE JOURNAL.

Chicago, July, 1873.

Volume Nine.

We would remind the readers and friends of *THE AMERICAN BEE JOURNAL* that this number commences a new volume, and that it is now a favorable time to pay up old scores, renew subscriptions, and canvass for an increased circulation. It is not a pleasant thing for an independent mind to ask help of any sort, and especially help of the pecuniary sort; but we feel that inasmuch as this journal is carried on in the interest of the bee-keepers of North America, we have a claim on their co-operation, and as our prosperity is virtually theirs, they will, in aiding us, be in reality benefiting themselves. The great fatality among bees during the past winter has led many to give up keeping bees, and taking bee journals, it is therefore the more important that all who have faith in apiculture as a great industrial interest, or even take pleasure in it as a scientific recreation, should do all in their power to help forward a periodical which has done, and is doing, more than any other on this continent for the development of this useful and entertaining pursuit. We cannot be too thankful to many who have been and are exerting themselves to the utmost in extending the circulation of this journal. To each one of our readers we beg to say, "Go thou, and do likewise."

A Correction.

In Jas. D. Meador's communication "From Missouri," in our last number, after the tenth line, page 273. The passage ought to read, "The first award is for the best display of honey by any association, \$150."

THE Emperor of Austria, in recognition of the eminent services of Dr. John Dzierzon, of Carlsmarkt, Prussia, rendered in advancing bee-culture, has decorated him with the Cross of the Knightly Order of Francis-Joseph.

WE have received from Messrs. George P. Rowell & Co., advertising agents, New York, a copy of their *American Newspaper Directory*, for 1873. It is well printed and well arranged,

and will be of great value to newspapers and advertisers.

WE have received two beautiful chromos from Orange Judd & Co., Publishers, New York. An exquisite chromo, "The Strawberry Girl," for every subscriber to *Hearth and Home*, for 1873. A beautiful chromo, "Mischief Brewing," presented to every subscriber of the *American Agriculturist*, for 1873.

Queens and the Mail Carriers.

Gen. Butler has attended to the communication addressed to him by Mr. Alley, in reference to sending queens by mail, and with how little result will be seen by the following extract taken from the *Washington Chronicle*, of June 16th. "Ben. Butler has recently interviewed the Postmaster General respecting the right of a constituent of his sending small boxes containing humble (?) bees through the mail. The Postmaster General reminded Mr. Butler that those who handle the mails complain of such packages, that the bees invariably become released from their stronghold, and cause the postman annoyance and trouble by being stung by the bees. "Well," says the Hon. B. B., "I can't imagine why so much consternation and complaint should arise from sending a few bees through the mails; those mail carriers make more fuss over a couple of bees than congressmen do in drawing their back pay."

Samson's Lion.

Our friend R. M. Argo, of Lowell, Ky., has written us a brief dissertation on the above subject, with a view of correcting the erroneous ideas many readers of the Bible have, as to a swarm of bees being found in the carcass of a dead lion. Some, he says, take the language in its literal meaning, and believe that there were really bees and honey in the dead carcass before the flesh had been destroyed by dogs and birds of prey, which were numerous in that country. Mr. Argo states his own views as follows: "These bees, according to Kitto's Bible History, must have been identical with the Egyptian of the present day; and, as they were very numerous in Canaan at that time, and hollow wood was scarce, they were apt to take up their abode in any hollow cavity they could

find, and as only a few days would suffice for flesh of the lion to become devoured by dogs and birds of prey, and the bones to become dry, it is natural and reasonable to suppose the swarm of bees established themselves in the cavity of the lion's skull, which is amply large enough for a swarm of bees." He adds, "If there is a better explanation, please give it."

While there are some credulous people who are quite willing to believe that these bees, contrary to their usual instincts, actually took keep their abode in the decaying and putrid flesh of the defunct lion, there are others, who, knowing that bees will not even alight on a dead carcass, find a difficulty in reconciling the Scripture narrative with the well-known facts of natural history in regard to the habits of bees. Mr. Argo has no doubt indicated the right way of removing this difficulty, though we think he is wrong in supposing that the bees "established themselves in the cavity of the lion's skull." That would be too small a hive for an average swarm of bees, as even Mr. Argo must admit if he reflects carefully on the point. There is no reason to think the lion was one of unusual size. It is described as a "young lion," but this does not imply that the creature was immature or half-grown, as the original rather conveys the idea of a lion in his youthful prime and vigor. It was then, an average adult lion. Now how much of a cavity would there be in the skull of such a lion? We have looked up this question in some natural-history books, in the hope of meeting with actual measurements that might help us out, but have not succeeded in finding them. From an engraving of a lion's skeleton, contained in one of these books, we are convinced that the skull-cavity is quite limited in capacity. The head bones are very massive, to give that strength of jaw for which the lion is remarkable, while the brain is small, and flattened out broad and shallow, as in all creatures of the cat tribe. The cavity in question might hold one of Mr. Hosmer's quart stocks, but certainly would not accommodate a good, natural swarm.

There is, we think, "a better explanation." It is that the bees took up their abode in the body of the dead lion. Insects are very abundant in the East, and they will, in a very short space of time, completely clear out all the soft parts of any carcass, leaving the skeleton entire,

covered by the skin. It is not necessary to suppose that "dogs and birds of prey" ravaged the lion's remains. In a place far enough from towns and villages for a "young lion" to be prowling about, it is not likely that dogs, at any rate, would be numerous. We have only to suppose the skin left comparatively whole, and the flesh eaten and picked out by insects—especially *ants*, which are very numerous in Oriental countries—and, the softer parts being removed, the bones and skin deprived of their moisture by the heat of the sun; and we have a hive which few swarms of bees would refuse to occupy. The skeleton would be covered with a sort of dry parchment, and, the interior, clean, sweet, roomy and convenient, would be a likely place for a swarm of bees to enter and take possession of, especially in a secluded spot, among the grape-vines.

This is the view taken by Kitto, who says, "In the East, bees establish themselves in situations little thought of by us; many wild swarms being left to find homes for themselves, fix in any hollow which seems to them suited to their wants. Often in the clefts of the rock, whence the mention of 'honey out of the rock,' (Deut. 32:13); often in trees, whence the mention of the dropping of the honey-comb,—a singular instance of which we have in the case of Jonathan, who found honey dropping from the trees to the ground, in his way through a forest." (1 Sam. 14:25, 26.)

Whether the bees were "identical with the Egyptian of the present day" or not, is a point it is not easy to settle. According to N. C. Mitchell, a stock of Egyptians would have given even Samson some trouble, if he undertook to rob them of their stores. But the lapse of three thousand years may have made some change in their disposition, and a variety of bees quiet enough to let Samson rob them with impunity, may now, as the result of crossings and habitudes, have become of a more warlike turn.

A Few Facts About Bees.

BY THE EDITOR.

Successful bee-management must of necessity be based on correct knowledge of the instincts and habits of bees. These have been thoroughly studied by naturalists, and are fully expounded in works on insect life, which are deeply inter-

esting, apart from their bearing on bee-culture an industrial and remunerative business. In fact, we know parties who keep a hive or two of bees, just because of the interest and pleasure they feel in observing their wonderful ways.

Without going into the minute details which a thorough naturalist would be curious to master, there are certain facts capable of being put into small compass, with which it is absolutely necessary every bee-keeper should be familiar. These we propose to state in this article.

Bees are of three kinds. Every complete hive or colony, contains one queen, a number of drones, (the fewer the better,) and a multitude of workers "the more the merrier." The queen is the only perfect female, and lays all the eggs from which the other bees are produced. The eggs are of two kinds:—the one hatches into drones, or male bees, while the other produces as a general rule, workers. These however, are simply undeveloped females, and every worker-egg is capable, under special treatment, of developing into a perfect female or queen. The special treatment consists in building what is called a queen cell, a roomy, pendant receptacle, somewhat resembling a pea-nut; housing the egg or young larva therein; and feeding it with a peculiar substance, known among bee-keepers as "royal jelly." This food has the effect of fully developing the young female, so that she comes upon the stage of life, fully qualified to increase and multiply. Instinct impels bees to raise queens when the hive becomes very populous, and swarming time is at hand, also when from any cause, the colony is deprived of its queen. Only one queen is required or allowed in a hive at one and the same time, and when from any cause, there is more than one, the workers kill the superfluous queen, if she be a stranger and interloper, or the reigning queen will kill the young rival who may have been hatched in the hive. Sometimes a queen will wander into the wrong hive, at other times bad weather prevents swarming, though the preparations have been made for it, and in such cases, queen slaughter is very apt to take place, unless as often happens, the workers protect the young queen until circumstances are more propitious for swarming.

Within from three to five days after being hatched out, the young queen issues from the hive on what is prettily called her "bridal tour,"—courtship, marriage, and impregnation being all accomplished on the wing, during a brief flight. Only for this purpose does the queen ever leave the hive, except when a swarm issues. One impregnation lasts for a life-time. Before it occurs, strange to say, the queen has the power to lay drone eggs; afterwards she is capable of laying both drone and worker eggs. It sometimes happens, that a queen fails to meet a drone at the proper period for fertilization. She then becomes a drone-layer, and with such

a queen, a colony is irrevocably doomed to extinction. This and other facts in the natural history of the bee, show the utility of movable frame hives, which admit of examination, and enable the bee-keeper to remove a drone-laying queen, and give the wasting colony a fertile queen, or a brood out of which to rear one. The queen-bee is endowed with wonderful prolificacy, and when honey forage abounds, instinct prompts her to put forth all her energies in the direction of fecundity. It has never been ascertained what is the utmost egg-producing capacity of the queen, but she has been known to lay as many as two thousand eggs in a single day. Her prolificacy is regulated by the food supply, and hence it is the policy of all good bee-keepers to stimulate by feeding in early spring, in order that there may be a large force of workers ready to take the field when the honey harvest arrives. The average life time of a queen is about three years, but it is considered wise policy not to let her live to old age, but to replace her in good season with a young and prolific successor. Worker bees are very short lived, not averaging more than about three months in the busy season. Incessant labor seems to wear them out very quickly, and their places are filled by the new generations that come crowding on to the stage of being. Drones are reared only in the spring as the time approaches for swarming; and as the honey harvest draws to a close, they disappear, usually as the result of a general massacre, on the part of the workers. In an apiary, even a small one, but few drones should be allowed to each hive. Here the movable frame hive again displays its utility, as the bee-keeper can, by its use, remove drone comb, and substitute worker comb for it. The queen lays drone or worker eggs, according to the size of the cells that are available for her to deposite her eggs in. Drone comb is easily distinguished from worker comb, as it is much larger. Drones gather no honey, they are consumers only, and of course are a tax and burden on the productive industry of a colony. Their only function is to fertilize young queens, and in view of the facts above stated, it will readily be seen, that very few of them in each hive will suffice to secure the end for which they exist.

The worker, as their name denotes, are the laborers, and perform a variety of tasks. They keep the hive clean, feed the young brood, cater to the queen, build cells, gather pollen, propolis and honey, defend their home from invaders, ventilate the hive in hot weather, and warm it in cold weather. Their operations are carried on with wondrous system, a sort of military order and discipline being maintained in the hive.

Pollen which is the farina of plants is collected as food for the young brood. Propolis is a resinous substance used in filling up cracks, and fastening combs or frames. Honey is gathered

not made, by the bees, it being a natural secretion in most flowers. Beeswax is not gathered but manufactured by the bees, and the process may be watched in an observing hive when comb building is going on. The bees fill themselves with honey, hang in clusters or chains, and by some internal process, secrete the wax, which may be seen exuding from between the scales of their abdomen in the form of little white scales. These are taken up by fellow workers, and formed into cells, which are built with true mathematical precision, and combine strength with the least expenditure of material, in a manner which has excited the wonder of philosophers, and formed a theme for poets in all ages. The manufacture of wax and the building of comb, occasion a large expenditure of honey, and hence it is good policy to preserve and utilize comb as much as possible. It lasts many years, if taken care of, and the extractor or melipult, is a most valuable invention, because it enables the bee-keeper to obtain honey without the destruction and loss of comb.

The eggs laid by a queen-bee hatch in three days into small grubs or worms. These are fed and nursed until about the eighth day when they become nymphs, and are sealed up in their cells, whence they issue perfect bees. A queen matures in from ten to seventeen days from the laying of the egg; a worker in twenty-one days; a drone in twenty-four days.—*Canada Farmer*, May 15th, 1873.

[For the American Bee Journal.]

Iowa as a State for Bee-Keeping.

Mr. Wm. C. Merrill, on page 140, December number, says he has wished that he was in Iowa or some other good place for bees, etc. I have been requested to give the readers of the A. B. JOURNAL my opinion of Iowa as a place for bee-keeping; but, as Noah Cameron says, my extreme modesty has always prevented it. When I moved from Wisconsin I selected my locality with especial reference to bee-keeping, and thus far (eight years) I have not been disappointed. We have first, in spring, sap from sugar-maple, willows, soft or white maple, poplar or Quaker asp, as some call it, of two varieties; then, wild currants, wild gooseberries, wild red and black raspberries, wild plums, wild apples, and wild cherries, three varieties, and wild grapes, three species of wild thorn, three varieties of elm and sugar or rock maple. All the above are in profusion. Then there are the tame or cultivated fruits, acres of wild apples, plums, currants and gooseberries. Then the sumach produces large quantities of pollen, and, some seasons, honey. Thousands of acres of timber are interspersed with basswood, and in some places very thickly. The burr-oak produces an abundance of forage in its season, and even timothy or herds-grass and corn come in in their places. Buckwheat

produces abundantly, and there could never be a soil better adapted to white clover than the soil of Iowa. It comes in naturally everywhere. Then we have fall or prairie flowers, consisting of so many varieties—that I do not know the name of—that I will not attempt to name them, but the principal among them are queen of the meadow and golden rod. We also have a species of wild balm, in bloom in August, that produces large quantities of excellent quality of honey, of a peculiarly rich, golden color. The locust-tree also, in its season, produces abundantly. Then there is a mustard, catnip, etc., etc. In fact, if the weather or season is right, there is a continual succession of honey-producing flowers from early in April until into October. Now, the reader will readily see that in our poorest season, if the bees are kept in the right condition, they will store enough for their own use and a surplus. The past season has been as good as any that I have seen since I came to the State, and twenty-eight stocks, in just eight days, gave 1,600 pounds of surplus besides building large quantities of comb at the same time. One stock, that had no comb to build, stored 160 pounds in the eight days, an average of twenty pounds per day. After the eight days' yield my stocks gained steadily, but very slowly, up to the middle of September, and all went into winter quarters heavy with honey, except two stocks, and they have sufficient to winter on without any feeding. My increase was eighteen stocks from thirty-two. Should the spring open up good I shall have from six to eight hundred pounds to extract.

E. GALLUP.

P. S.—I have never had to feed in the fall since coming to the State. My bees have always stored sufficient for their own use. But if we had depended upon comb-honey the past season, we should have got almost nothing.

E. GALLUP.

Chicago Honey Market.

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